

BLEACHED EXPANDED PIGSKIN AND PRODUCTS

CLAIMS

1. A method of processing pigskins having a moisture content of 50-80% by weight, comprising the steps of:
 - a) lime-alkali processing the skins by applying a paste to the skins until colloidal protein in the skins is dissolved, the paste comprising a mixture of alkali liquid, alkali enzymes and lime, the paste having a pH of greater than or equal to 12;
 - b) washing the skins in ammonium chloride or chloride sulphate and then cleaning the skins in water;
 - c) washing the skins in ammonium chloride or chloride sulphate, and in enzymes to soften and expand the skin;
 - d) removing the fat from the skins;
 - e) bleaching the skins with hydrogen peroxide or potassium permanganate.
2. The method of claim 1 wherein the step of applying a paste to the skins further comprises the step of applying a paste comprising a concentration of alkali liquid of 10-30% by weight of sodium sulfide, lime and 0.01-0.05% by weight of alkali enzymes and applying the paste to the skins for 10-30 hours.

3. The method of claim 1 wherein the step of washing the skins in ammonium chloride or chloride sulphate further comprises the step of washing the skins in 1-2.5% by weight of ammonium chloride for 0.5-3 hours.
4. The method of claim 1 wherein the step of washing the skins in ammonium chloride or chloride sulphate, and in enzymes, further comprises the step of washing the skins in 4-8% by weight of ammonium chloride and 0.1-0.5% by weight of enzymes for 3-8 hours.
5. The method of claim 1 wherein the step of bleaching the skins with hydrogen peroxide or potassium permanganate further comprises the step of washing the skins in 15-30% by weight of hydrogen peroxide for 0.5-5 hours.
6. The method of claim 1 wherein the processed pigskins are expanded, white and soft.

7. The method of claim 1 wherein:
- a) the step of applying a paste to the skins further comprises the step of applying a paste comprising a concentration of alkali liquid of 10-30% by weight of sodium sulfide, lime and 0.01-0.05% by weight of alkali enzymes and applying the paste to the skins for 10-30 hours;
 - b) the step of washing the skins in ammonium chloride or chloride sulphate further comprises the step of washing the skins in 1-2.5% by weight of ammonium chloride for 0.5-3 hours;
 - c) the step of washing the skins in ammonium chloride or chloride sulphate, and in enzymes, further comprises the step of washing the skins in 4-8% by weight of ammonium chloride and 0.1-0.5% by weight of enzymes for 3-8 hours;
 - d) the step of bleaching the skins with hydrogen peroxide or potassium permanganate further comprises the step of washing the skins in 15-30% by weight of hydrogen peroxide for 0.5-5 hours.
8. A method of treating pigskins, comprising the steps of:
- a) applying an alkali paste to the skins to dissolve colloidal protein in the skin;
 - b) removing the alkali from the skins;
 - c) washing the skins with enzymes so as to soften and expand the skin;
 - d) removing fat from the skins;

- e) washing the skins with a bleaching agent so as to whiten and expand the skins.
9. The method of claim 8 wherein the step of applying an alkali paste further comprises the step of applying an alkali paste comprising an alkali, an alkali enzyme and lime, the paste having a pH or greater than or equal to 12.
 10. The method of claim 8 wherein the step of applying an alkali paste further comprises the step of applying an alkali paste comprising 10-40% by weight of an alkali liquid, 0.01-0.05% by weight of an alkali enzyme and a quantity of lime to raise the pH of the paste to greater than or equal to 12.
 11. The method of claim 8 wherein the step of removing the alkali from the skins further comprises the step of washing the skins in at least one of the group consisting of ammonium chloride, ammonium sulfide and chloride sulphate.
 12. The method of claim 8 wherein:
 - a) the step of removing the alkali from the skins comprises at least two washes;
 - b) the step of washing the skins with enzymes occur simultaneously with at least one of the washes to remove the alkali from the skins.

13. The method of claim 8 wherein the step of removing fat from the skins further comprises the step of washing the skins in a surfactant.
14. The method of claim 8 wherein the step of washing the skins with a bleaching agent further comprises the step of washing the skins with 15-30% by weight hydrogen peroxide.
15. The method of claim 8 further comprising the steps of, before applying the alkali paste to the skins:
 - a) wetting the skins with lime liquid;
 - b) removing an outside layer of the skins and retaining the inner layers of the skins.
16. The method of claim 8 further comprising the steps of, after washing the skins with a bleaching agent:
 - a) forming the wet skins into pet chew products;
 - b) drying the products in an oven.
17. The method of claim 8, further comprising the steps of:
 - a) swelling the skins by wetting the skins with lime liquid;
 - b) expanding the skins by baking the bleached skins.

18. An animal chew product, comprising pigskin shaped into an animal chew, the pigskin having its colloidal protein removed, the pigskin being soft when wet and bleached, the pigskin being expanded relative to raw pigskin.
19. The animal chew of claim 18 wherein the pigskin is soft when wet due to enzymes.
20. The animal chew of claim 18 wherein the pigskins comprise the inner layer of a pig's hide.
21. The animal chew product of claim 18 wherein the pigskin has voids located therein, the voids containing a flavoring agent.
22. The animal chew product of claim 18 wherein the pigskin has voids located therein, the voids containing a breath control agent.